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ABSTRACT

For over a hundred years the federal government has been underfunding its treaty obligations and other commitments to the Navajos. As a result, much of the reservation economy now operates at the level of bare subsistence. Deficiencies in social overhead capital have brought on even more marked deficiencies in industrial and commercial capital. These deficiencies are in turn reflected in undeveloped human resources, in lagging educational levels, a high incidence of disease and malnutrition, and an emerging complex of human problems. Therefore, the Navajo people and their Tribal government are seeking government assistance for a Ten Year Plan to bring the Navajo up to an equal footing with the rest of the nation. Implementation of this plan will require a substantial increase in public expenditures. The Ten Year Plan will be developed in two parts. Part I sets out the main features of the gap that separates the Navajo's economic and social circumstances from those of other Americans, and indicates the magnitudes of the public investment that will be required to close the gap. Part II will specify the goals and steps needed to achieve them. Funding requirements are set out in two categories: social overhead investment and investment in productive business enterprise. Since cost estimates set out in the Plan are based on 1972 price levels, Navajo circumstances will continue to lag behind in 1982, but the gap that still exists will be rapidly closing. This report presents Part I of the Ten Year Plan. (Author/NQ)

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THE NAVAJO 10 YEAR PLAN

PART I

A 100-Year Deficit and the Needed Investment to Bring About Equal Navajo Opportunity

. . . . what is rightfully ours, we must protect; what is rightfully due us, we must claim.

What we depend on from others, we must replace with the labor of our own hands and the skills of our own people.

What we do not have, we must bring into being. We must create for ourselves.

Peter MacDonald

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June 1972

THE 100-YEAR DEFICIT

By Peter MacDonald, Chairman
Navajo Tribal Council

For over a century the Navajos have been waiting for the fulfillment of promises made. On June 1, 1868, the Navajo Tribe and the United States Government entered into a treaty wherein the United States agreed to give aid to the Navajo people. Article VI of the Treaty included a pledge that "for every thirty children – a house shall be provided, and a competent teacher furnished –." Farms and implements and by inference irrigation water were to be provided Navajos who wished to farm. Schools, roads, and health care were promised.

Shelter and employment opportunity have been promised by subsequent white leaders and by acts of Congress. Expansions of these promises have been made continuously since that time; pledging to improve the education, the health, and the economy of the Navajo people. Although the Navajos have long since fulfilled their part of the treaty, the United States Government has repeatedly reneged on its promises or only partially fulfilled them.

It is not necessary to turn to the remote past for evidence of duplicity. Indians were assured in the early 1950's that no termination action would be taken without careful consultation. BIA Commissioner Glen L. Emmons, the father of termination, said repeatedly, " . . . I can and do pledge that each tribal group will be fully consulted by the Bureau of Indian Affairs before we take any final action recommending a termination program to the Congress."

The promises were broken. The Indians were consulted infrequently, and when they were sought out they were coerced with threats to freeze claims awards, with promises of extra concessions and with a variety of high-pressure tactics which effectively precluded any meaningful Indian participation or opposition. Hearings on termination became a pro forma orchestration of decisions already made in Washington by non-Indians.

More recent cause for the lack of Indian trust in Washington government occurred in 1966. The Indians were promised that they would be centrally involved in the creation of a master plan for Indians – the Johnson Administration Indian Resources Development Bill – which was introduced in Congress a year later. The Interior Department wrote the Bill, and Indian support was viewed as crucial for its passage. Regional hearings were held in nine areas, with Indians participating and offering a total of 1,950 recommendations. Press coverage was excellent. Only later did the Indians learn that the legislation had been drafted – *before the hearings*. The bill as drafted was called the Indian Omnibus Bill by its sponsors but, for cause, came to be known in Indian country as the Indian Ominous Bill. Few regretted the bill's failure.

Another example, one of direct concern to the Navajos, was Public Law 87-483. This law, recognized in Congressional hearings to be a fulfillment of

treaty obligation, was designed to furnish water to 110,000 irrigable Navajo acres. Water was to reach the first 10,000 acres by 1970. Less than one third of the funds authorized by Congress were actually appropriated, and as time wore on Public Law 91-416 amended the time of delivery to 1975 at the earliest. Another example of a promise made and a promise broken.

For too long the interests of the Navajo have been expendable or amendable in favor of other interests. This was stated clearly by President Nixon in 1970 when he spoke to Congress of the white man's *"frequent aggression, broken agreements, intermittent remorse* and *prolonged failure."*

But the Navajo now has new hope. The President went on to state: "It is long past the time that the Indian policies of the Federal Government recognize and build upon the capacities and insights of the Indian people. Both as a matter of justice and as a matter of enlightened social policy, we must begin to act on the basis of what the Indian themselves have long been telling us. The time has come to break decisively with the past and to create the conditions for a new era in which the Indian future is determined by Indian Acts and Indian Decisions."

In the following pages we compare the present level of development of the Navajo Nation with the rest of the United States. We have made preliminary estimates of the deficit and projections of both the amount of money and the time that will be required to eliminate it. The amount of money which will be required is large but this sum must overcome a deficit which has been accumulating for over 100 years. It must also be remembered that this sum will not only relieve the suffering, deprivation and neglect so long born by a proud people. It will also save the tax payers many times this amount as the Navajo economy develops and wages and production replace public aid. Self-determination is the road to self-sufficiency, and we are on our way.

In presenting this report I wish to acknowledge the help of those dedicated people who made it possible – my colleagues in the Navajo Tribal Council and Advisory Committee who provided wise advice and patient counsel, the members of my staff who worked unselfishly and tirelessly in research and analysis, and most of all the Navajo people at the hogan level, who have in thousands of meetings and individual discussions made it clear to me that they are determined to move ahead – so that our children can have a better life.

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SUMMARY

For over a hundred years the Federal Government has been underfunding its treaty obligations and other commitments to the Navajos. As a result of this underfunding, much of the Reservation economy now operates at the level of bare subsistence.

Roads are few and these few are substandard, housing is many years behind the times, education and health programs are minimal . . . on every hand, Navajo country lacks the facilities and organization which sustain economic development. These deficiencies in social overhead capital have brought on even more marked deficiencies in industrial and commercial capital.

Deficiencies in social and productive capital are in turn reflected in undeveloped human resources – in lagging educational levels, a high incidence of disease and malnutrition, and an emerging complex of human problems. Figure 1 sets out statistical indicators of the various deficiencies in Navajo circumstances.

The Navajo people and their Tribal government have determined to reverse this long trend, and to seek government assistance for a Ten Year Plan to bring the Navajo up to an equal footing with the rest of the nation. Implementation of this plan will, indeed, require a substantial increase in public expenditures. The essential difference between this plan and previous "plans" and administered efforts does not lie in any proposed funding additions, however, but in this Ten Year Plan's thrust toward development of Navajo self-sufficiency – toward substitution of Navajo production for public subsidy. The history of federal assistance for the Navajo makes it clear that if present programming concepts persist the Navajo may never escape dependency. Only an adequately financed program, designed and implemented by Navajos, can break with the sorry record of our administered past and begin to forge ahead.

The Ten Year Plan will be developed in two parts. Part I, which is presented in this report, sets out the main features of the gap – the deficit – that separates the Navajo's economic and social circumstances from the circumstances of their fellow Americans. This part also indicates the magnitudes of the public investment that will be required to close the gap. Part II will elaborate a design for development – will specify goals and the steps we must take to achieve them.

Table I summarizes the Part I report. Public funds of $4 billion over the next ten years will be required in order to make a substantial impact on the 100-year deficit. Funding requirements are set out in two categories:

1. Social overhead investment – the public funds required to cut back significantly the deficits in health, education and economic infrastructure which handicap Navajo development. Social overhead investment of $3.8 billion will be needed over the next ten years. These funds include – are not in addition to – present federal expenditures in Navajo country. Present

expenditures projected at their existing level would total nearly $1.9 billion after 10 years. Proposed public expenditures would thus be about double present funding levels.

2. Investment in productive business enterprise. The planned public investment in social overhead capital is expected to generate complementary private investment in industrial and agricultural production and in commercial and service enterprise. If national ratios of capital investment to jobs ~~obtained~~ during the Ten Year Plan, public loan funds of $232 million will generate about twice as much investment by private capital – about $400 million. For purposes of Part I of the Plan, however, the investments set out in Table I include only public funds, i.e., the public funds required to generate an effective amount of private investment in productive business enterprise. More precise determination of private investment requirements will be a primary component of Part II of the Ten Year Plan.

In summary, ten year requirements for public funds for social overhead facilities and services and for productive enterprise are projected as follows:

	Social Overhead Capital	Directly Productive Enterprise
	(Millions of dollars)	
Present funding level	$1,900	$ 50
Additional public funds	1,900	180
Total	$3,800	$230

Jobs and productive work were a primary gauge for determining the amount of the Ten Year Plan's investment requirements. About 25,000 men and women in the present labor force – more than 60% – are now effectively unemployed. They want work but are unable to find steady work. The proposed public and private investments will provide jobs or remunerative self employment for 46,000 Navajos – 26,000 in the public sector and 20,000 in the private sector. Development of a now lacking multiplier will raise this total by several thousand. By the conclusion of the Ten Year Plan, 90 to 95% of the anticipated Navajo labor force will be employed. Navajo unemployment will be down to national levels.

The other primary gauge for determining Ten Year Plan investment requirements was the deficit between the social overhead capital provided the Navajo and that afforded his fellow Americans. That is, the Plan will not only provide jobs; it will also create the economic infrastructure upon which development of productive enterprise depends.

The $3.8 billion in social overhead investment which we propose over the next ten years will provide the following capital assets, and result in an infrastructure capable of supporting a highly productive economy:

$170 million worth of facilities and equipment for education and vocational training,

$50 million worth of inpatient and outpatient clinics and hospitals,

$160 million worth of water, sanitary and electric utilities,

20,000 new housing units,

2500 miles of paved roads and streets and a somewhat greater mileage of graded, graveled roads,

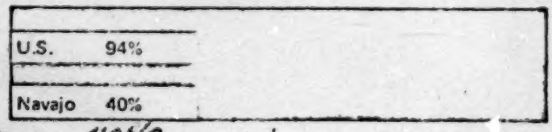
$6 million worth of industrial and commercial and service businesses.

Figure 1
NAVAJO CATCH-UP REQUIREMENTS: SOCIAL INDICATORS

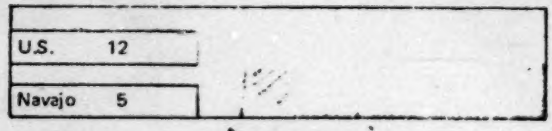
The following indicators show how much must be done to give the Navajo people an even break in education, health and necessities of life, and in the opportunity to make their own way in the economic world. Better indicators could be devised if facts were available, but the indicators set out here are adequate for the task at hand – to show the gap which must be closed and to point to requirements for closing it.(1)

Income
per capita personal income, 1970 (SA & BIA)

Employment
percent of labor force with jobs, 1970 (MRP & NCC)



Education
average school years by adults, 1970 (SA & BIA)



Health
infant survival ratio, 1970 (reciprocal of infant mortality rates) (PHS)

Housing
percent of homes with standard inside plumbing (SA & PHS)

Transportation
miles of surfaced roads per 1,000 sq. mi. (SA & BIA)

Economic Development
percent of labor force employed in manufacturing (MRP & NCC)

commercial and service businesses per 100,000 population (BBR & NCC)

total farm output per farm (SA & BIA)

(1)Sources for Figure 1: SA – Statistical Abstract of the United States, 1970, BIA – Navajo Area Office, Bureau of Indian Affairs, MRP – Manpower Report of the President, 1971, NCC – Navajo Community College, PHS – Navajo Area Office, Public Health Service, BBR – Bureau of Business Research, University of New Mexico

Cost estimates set out in the Ten Year Plan are based on 1972 price levels, and as time goes on these estimates will have to be increased as costs escalate with inflationary trends in the national economy. Another factor results in the Plan's estimated costs understanding the amounts which will be needed to give the Navajo people an even break. The Ten Year Plan goals for 1982 in Navajo education, health, etc., are based on United States averages in 1972. Navajo circumstances will therefore continue to lag behind in 1982, but we will be rapidly closing the gap that still exists.

As the Ten Year Plan becomes operational, we expect an increasing proportion of public expenditures for welfare services to be replaced by private Navajo earnings. Navajo savings and investment will increasingly supplement public investment. Increasing tax revenues from Navajo country will offset other public expenditures as economic development gains momentum. We calculate that the economic value of these benefits to American society will be three times greater than the costs which American society will have to incur in implementing the Ten Year Plan (a benefit/cost ratio of 6 to 1.9). The existing social deficits are very heavy, however, and a commitment to a full ten years of both substantial national investment and unremitting Navajo effort will be needed if we are to insure a significant "take off" in the Navajo economy.

Figure 2
ECONOMIC DEVELOPMENT PLAN: CHANGING COMPOSITION OF THE NAVAJO ECONOMY

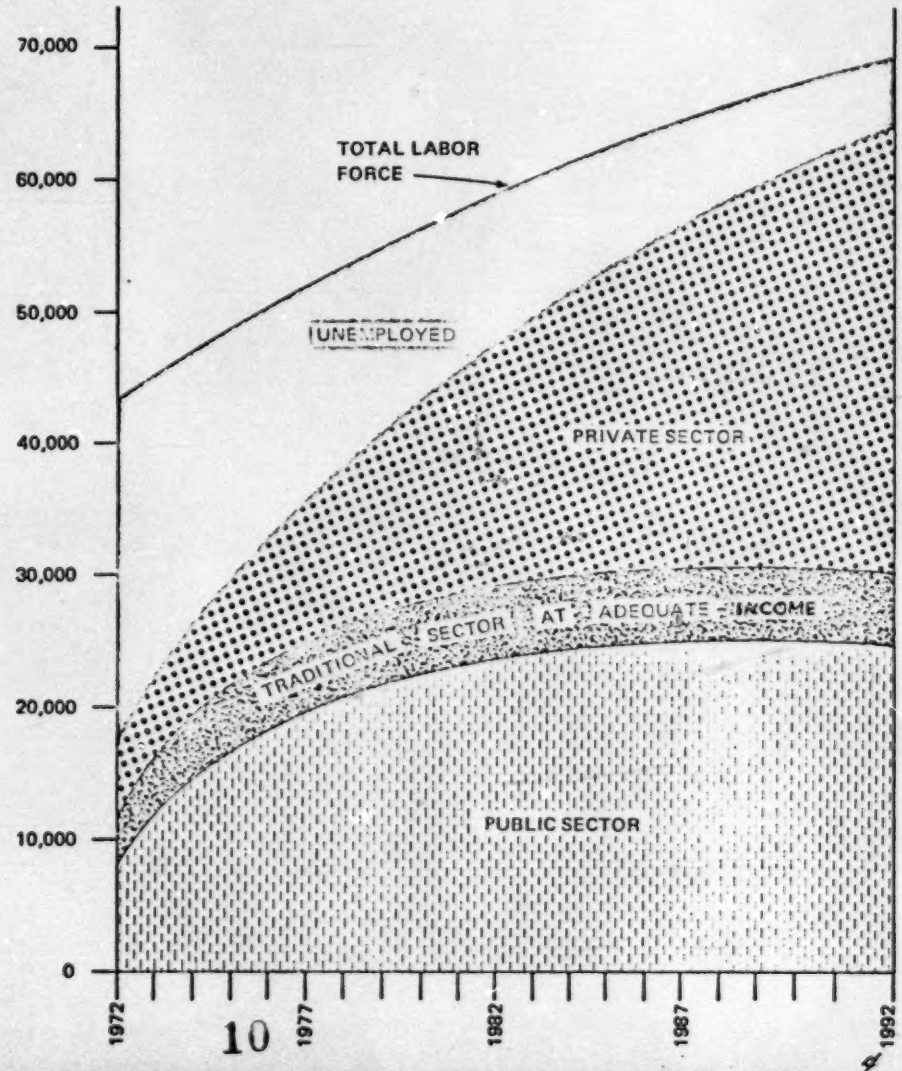


Table 1
PUBLIC INVESTMENT (TEN YEAR TOTALS) AND RESULTING EMPLOYMENT (ANNUAL AVERAGES)

Social Overhead (Public) Sector* (Investment in Human Resources Development)			Production (Private) Sector (Investment in Directly Productive Activities)		
Program	Investment 10 Years	Employment (Per Year)	Industry	Public Share** of Investment	Employment (Per Year)
Education and Manpower Development	$1,210,000,000	10,200	Small Business		
			Manufacturing, transportation and construction	$ 24,000,000	2,200
Health	422,000,000	3,300	Retail trade and services	30,000,000	4,700
			Large Scale Industry		
Housing (public sector)	372,000,000	1,500	Footloose Industry	13,000,000	3,000
			Resource utilization	1,000,000	1,700
Roads and other transportation	740,000,000	1,400	NFPI	8,000,000	800
			Tourism & Recreation		
Public Utilities	164,000,000	1,100	Motels, etc.	26,000,000	1,200
			Arts & Crafts	10,000,000	(increased incomes)
Public Services	173,000,000	1,900	Agriculture		
			Navajo Indian Irrigation Project		
Parks and Recreation	137,000,000	5,500	Farms	30,000,000	1,000
			Processing	30,000,000	1,000
Land and Water	520,000,000	1,000	Crop production	10,000,000	–
			Transforming traditional agriculture:		
Research & Development	40,000,000	100	credit, marketing, etc.	50,000,000	5,000
TOTAL	$3,778,000,000	26,000		$232,000,000	20,600

*Includes present, on-going program expenditures as well as needed additional expenditures. About half of the expenditure totals are for present programs and about half are additional expenditures.

**Public funds will generate private investment in considerable larger amounts. The amount of private funds will be estimated in Part II of the Ten Year Plan's determination of specific business potentials. //

CONTEXT FOR DEVELOPMENT DESIGN

HISTORICAL PERSPECTIVE

After their return from Ft. Sumner, the Navajo quickly adapted to the economic potentials of the land restored to them. Sheep were the primary means of livelihood in this land, and Navajo flocks grew steadily to support the increasing Navajo population. Much of Navajoland is semiarid, and Navajo families were soon making use of all the land where pasture and water could be found.

For a time the needs of the increasing population were met by enlarging the Navajo land area. Land acquisition was practically closed off by the early 1900's, however, and the increasing population and increasing herds of livestock brought heavier and heavier pressure on the fixed land base. The grazing crisis of the 1930's and the livestock reduction trauma finally left no way out except through creating a more diversified economic base.

Navajo country had been isolated from the main economic currents of America. Traders had come as time went on, the railroads brought work for maintenance crews, and the federal work programs of the 1930's had a substantial impact on the Navajo economy. Then came World War II, and from that time on far-reaching changes have come thick and fast.

The veterans returned, their war record renowned and their code talkers internationally famous; all of them with new technological knowledge and skills. The Tribal Government steadily assumed a much wider range of authority. In 1950 the U.S. Government recognized the shameful lack of schools for Navajo children and embarked on the Navajo-Hopi Rehabilitation program. Oil was discovered and the Tribe invested oil revenues in scholarships, in economic development, and in welfare services neglected by state and federal governments. In the 1960's the Tribe began to utilize their economic base somewhat more fully and to seek protection for their resource rights.

The Widening Gap – Although substantial gains have been made during recent times in Navajo health, education and welfare, the actual gap between Navajo incomes and general U.S. incomes is actually widening (Figure 3). Year by year the Navajo economy has fallen farther behind. The new Tribal government of 1971 thus found itself faced with a developing crisis. The Ten Year Plan is the basic step forward to meet this crisis.

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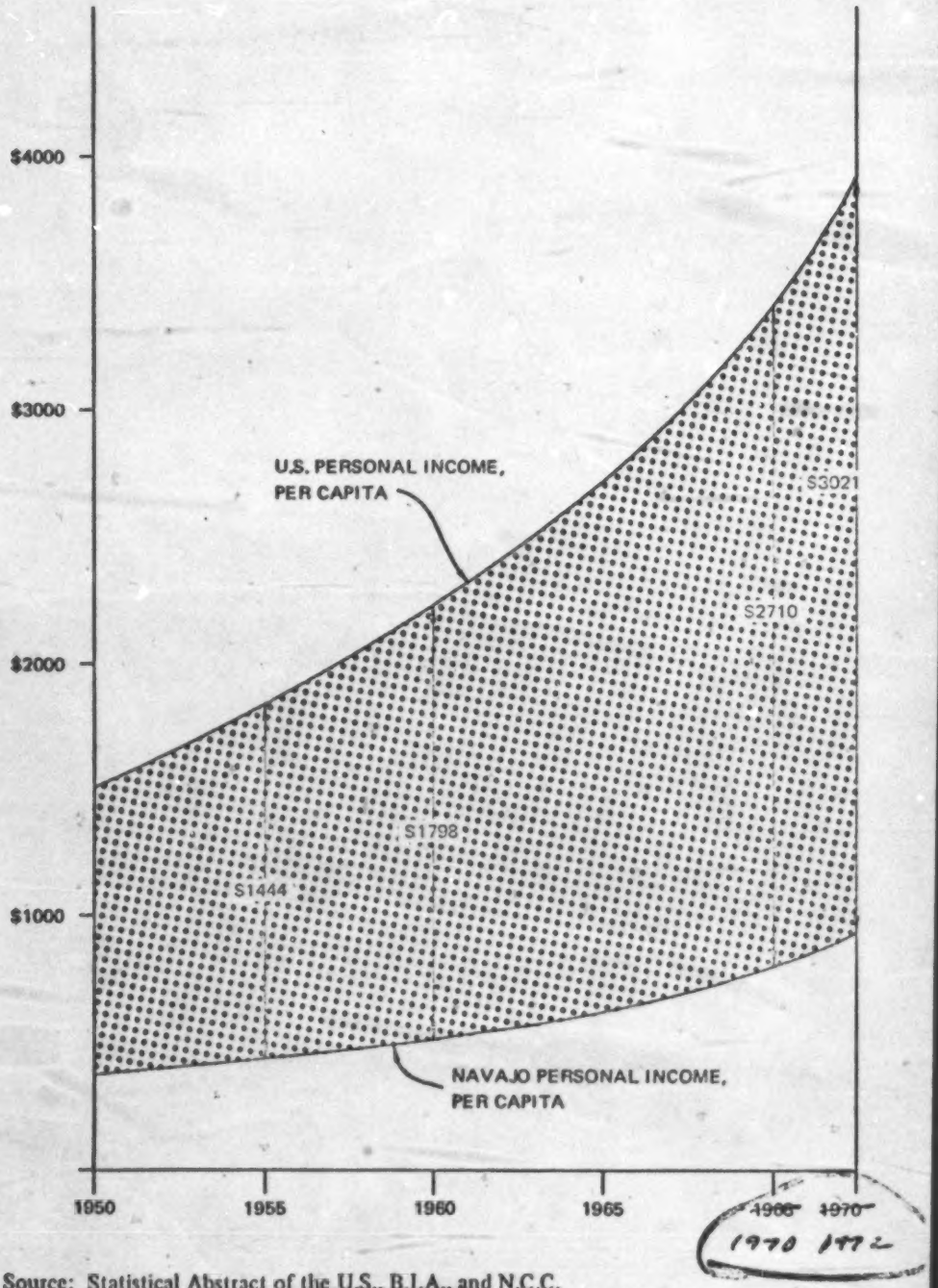
Figure 3
THE WIDENING GAP BETWEEN UNITED STATES AND NAVAJO PERSONAL INCOME (PER CAPITA)



Source: Statistical Abstract of the U.S., B.I.A., and N.C.C.

Notes: U.S. and Navajo income data are not strictly comparable, but the discrepancy understates the gap that actually exists; i.e., results from showing higher Navajo incomes than actually exist. Income data are in current dollars.

RESOURCES AND ECONOMIC BASE

Land and Water – The Navajo land area encompasses some 25,000 square miles. More than half of the land (55%) is classed as desert, but supports scattered herds of livestock. Nearly two-fifths (37%) of the land is classed as steppe, a semiarid land also used for grazing. About 8% of the land is forest and mountain country, used for lumber production and with attractive potentials for outdoor recreation.

Because of the lagging development of other means of livelihood, Navajo rangeland for many years had to carry more livestock than it could actually support. As a result the land is badly eroded and has lost much of its natural grasses and shrubs. Restoration and conservation of the land is an essential for Navajo development.

Navajo water rights must also be restored. The Navajo are legally entitled to the water they can use beneficially from the streams which flow through or border the Reservation. The Navajo use very little of this water, however, because the dams and irrigation projects which are necessary for water use have not been provided. At last, in 1962, the Navajo Irrigation Project was authorized by Congress, but only a trickle of funds have been provided to carry out the Congressional authorization. As a result of this and other failures, the Navajo are in danger of losing their rights to water.

Recreation Resources – The Navajo Country, even the arid and rocky area, is spectacularly beautiful, and tourism and outdoor recreation have a considerable economic potential. Lake Powell, which fronts on a stretch of the northern border of Navajo country, may be the major tourist potential. There is, however, no highway whatever and very few roads of any kind on the Navajo side of Lake Powell. All roads which have been built thus far (and built with public money) lead to non-Indian retail markets, lodges, marinas and camping sites. The tourist dollar is forced to go where these roads lead.

Energy Resources – Navajo energy resources – oil, natural gas, coal, and uranium – are the major sources of Navajo Tribal income. Oil leases and royalty revenues have made it possible for the Navajo Tribe to pay the costs of its government and administration, of law and order in Navajo country, and of a good many work project and welfare costs, such as the cost of clothes for school children. Oil and gas reserves are, however, being depleted; and coal, the other major Navajo energy resource, cannot replace the oil and gas revenues. Coal reserves are nevertheless extensive, and are being utilized.

Human Resources – The Navajo peoples' skills and capabilities are the essential resource upon which Navajo development depends. Navajo workers have proved their capability whenever they have found work, but many lack skills and a considerable number have little or no knowledge of the English language.

The Navajo labor force is estimated at slightly more than 40,000 men and women. Of these men and women, only 15,000 are employed with any regularity, and 5,000 of these are self-employed – are raising stock or making handicrafts, or usually both. There are, therefore, about 25,000 Navajo men and women who need work and want to work, but who can find no work or only temporary jobs, often away from home. In addition, about 2,000 young men and women grow up and enter the Navajo labor force each year.

The Navajo are a young population – nearly half are 17 years of age or younger (Figure 4). This is 12 years younger than the median age of the United States population. One consequence is that a proportionately higher investment in schooling is required for Navajo people. Another consequence

is that proportionately fewer Navajos are in the labor force – are available for productive work. The average Navajo family size is 5.6, compared with 3.6 for the United States as a whole. The larger family size has important implications for planning medical facilities, schools, nutritional programs and for family income generally.

Table 2 compares certain Navajo labor force and population characteristics with those of the rest of the United States.

Figure 4
NAVAJO AND U.S. POPULATION, BY AGE GROUPS

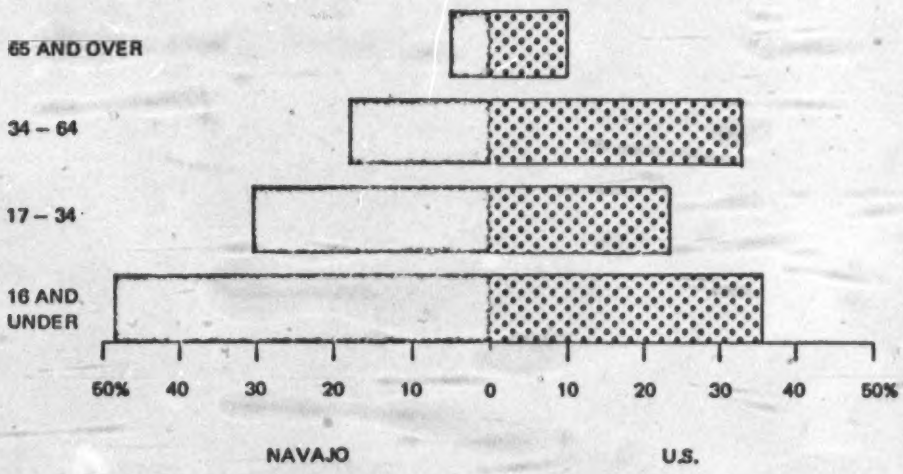


Table 2
POPULATION & LABOR FORCE CHARACTERISTICS: NAVAJO AND U.S.

	Navajo	All U.S.
Median age	17	29.5
Average family size	5.6	3.6
Annual population growth rate	2.5	1.1
Labor force as % of population	31	40
Rate of unemployment (%)*	60	6

Sources: Navajo demographic data, BIA & PHS; Labor force and unemployment data, NCC; U.S. data, Statistical Abstract, 1970, and Manpower Report of the President, 1971.

* The percentages are not strictly comparable. The U.S. rate includes only those actively seeking work. The Navajo rate includes all those wanting work and without regular work, even though they may not be actively seeking work because they know that there is no work to seek.

Capital Reserves – Accumulated capital reserves derived from oil revenues now total about $50 million. Some of these funds are available for investment in economic development. The funds must be guarded carefully, however, against the time when oil depletion reduces Tribal income below the amount necessary to maintain essential services.

COSTS AND BENEFITS OF THE TEN YEAR PLAN

Direct Costs and Benefits – Costs of the Ten Year Plan are, in the first place, the additional public expenditures on social facilities and programs – on Social Overhead Capital. These costs – which amount to $1.9 billion – are set out in Section II. Not included in these costs is "private sector" investment – investment in productive enterprise. Both public and private components of this productive investment will be evaluated, as is other productive investment, on the basis of its profitability.

The overall objective of the Ten Year Plan is substantial Navajo self-sufficiency, and social benefits should be measured in achievement of this goal. In this report employment is generally used as a proxy for self sufficiency. As the plan is implemented, therefore, the economic value of its benefits to society will be measured in increases in employment and earnings. Its public sector benefits will be measured primarily in decreases in welfare payments on the one hand, and increases in tax payments on the other. Other useful measurements will also be carefully recorded and analyzed – educational achievement, improved health, and various indices of quality of life as well as of economic performance.

Rather than attempt to estimate in Part I of the Ten Year Plan the economic (dollar) value of these potential benefits, however, this report simply notes a useful benefit-to-cost ratio which can be derived from presently obtainable facts and figures.

Economic Loss through Underutilization of Manpower – Methods have been designed for estimating the loss to society – the goods and services that are foregone – because of poor utilization of manpower resources.(2) The output of Navajo manpower is far less than it should be because of unemployment and also because manpower that is employed is so poorly equipped – works with so little capital equipment and technological know-how – that its productivity is low.

One estimate(3) placed the output of Indian manpower which was foregone in 1960 at $1 billion. At the rate at which the loss in potential product has increased, the total loss would have amounted to $2 billion by 1970. The Navajo proportion of total Indian manpower underutilization in 1970 would thus amount to about $600 million a year, or $6 billion or more over the next ten years.

The direct gains from economic development would, by the conclusion of the Ten Year Plan, have risen to a ratio of $6 billion in benefits to $1.9 billion in costs (incremental costs, or additional costs above existing expenditures). The major share of benefits will not be realized in the first ten years, but through accelerating Navajo production as time goes on. Not only direct gains but induced gains (the multiplier effect) should increase substantially as time goes on.

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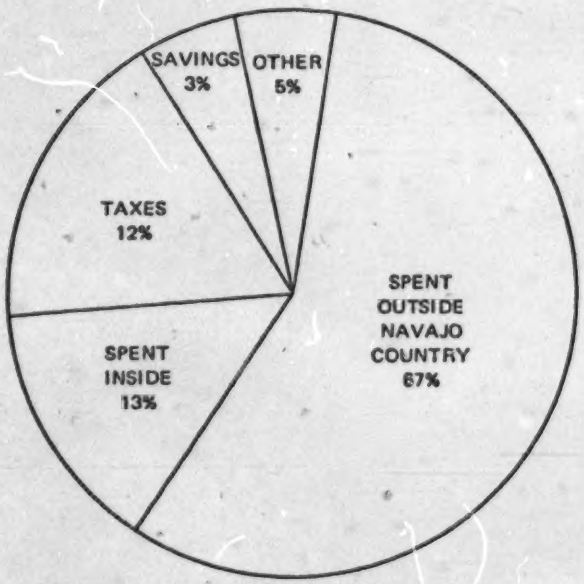
(2)For an exposition of such a method, see "Developing Estimates of Economic Underemployment for the Rural Labor Force of Seven Southern States," by Thomas T. Williams and Robert Glagow, *American Journal of Agricultural Economics*, Vol. 50, No. 4-5 (Nov. – Dec., 1968)

(3)"American Indian Manpower: Costs of Underutilization" by Dennis J. O'Connor and Benjamin J. Taylor (paper presented at the 43rd, 1969, Annual Conference of the Western Economic Association).

Adding a Multiplier Effect to the Navajo Economy – The effects of increased investment normally include a multiplier reflecting additional income resulting from additional rounds of local expenditure of wages and other payments. In Navajo country, however, there is almost no multiplier. As illustrated in Figure 5, only 10% to 15% of the money made in the Reservation is spent within the borders of the Reservation. Very little Reservation production is sold, moreover, (for processing or for consumption) to people who live on the Reservation.

The aim of the Ten Year Plan is to give the Navajo economy a multiplier approaching 1.5, which is only slightly less than the multiplier of the New Mexico economy.

Figure 5
WHERE THE NAVAJO DOLLAR GOES



Source: Navajo Community College

SECTION II

SOCIAL OVERHEAD INVESTMENT

This section summarizes the investments required in roads, education, health, utilities, and the other socially provided facilities and organizations that serve the community. Housing which is presently needed by Navajo families is included in this section. Housing which will be needed by middle and higher income families is included in Section III – the private or production section. Because of general Navajo poverty incomes, most housing will be in the public (social overhead) sector for some time to come.

The social overhead categories which follow include only the most urgently needed public programs. Social services are a rapidly emerging sector of the national economy and a good many public facilities and services that have been thought of as amenities are increasingly seen as necessities. In Navajo country, moreover, economic development and resulting urbanizing trends will make it necessary to provide many public services that are not now found in Navajo country, or are performed by family and extended family members. As time goes on the costs of many of these public services will of necessity be borne by community resources. Until community resources are more nearly adequate, however, federal government support for essential services and for various amenities will be needed in order to facilitate development.

Costs estimates for the various following categories are the aggregate of the existing program expenditures, projected at a 2.5% per year growth rate, plus the additional program expenditures which are required to bring Navajo circumstances up within the range of present national circumstances. "Present national circumstances" is not an adequate criterion to use in 1972 to establish goals for 1982. More exact and useful criteria than those used in Part I will be developed in Part II of the Ten Year Plan.

Projections of existing program expenditures in this report have been based on average annual expenditures over the past five years, where data are available. To the extent that facts are available, existing program expenditures include all federal and state programs.

Although cost estimates in this report provide for a constant rate of population growth, no provision is made for inflation. *Costs are figured in 1970 dollars*, and the long term escalation of price levels will of course mean that the costs set out here will have to be revised upwards steadily as the Ten Year Plan goes on.

EDUCATION AND MANPOWER DEVELOPMENT

Deficit – In the treaty of 1868, the U.S. Government agreed to provide the Navajo Indians with schools and a teacher for each thirty Navajo children. In 1950 the Government undertook its first substantial program to fulfill the treaty obligation. This program's expenditures were concerned with primary and secondary schools. As shown in Figure 6, these expenditures brought about considerably better educational opportunities for Navajo children. Much remains to be done, however, for improved elementary and secondary education, and whole new efforts must be mounted in other educational fields. In recent years beginnings have been made in some of these other fields. Major deficits which are outstanding are as follows:

1. Secondary Education. Boarding schools were acceptable as an interim solution to the education problem in the 19th century but with the modern means of transportation now available they are not acceptable. There are still far too many Navajo children taken away from their homes and parents for long periods and sent to off-reservation schools. Such actions are not welcome in any society and are totally alien to the close family traditions of the Navajo. With the construction of the roads and schools recommended by this Ten Year Plan it should no longer be necessary to separate families.

2. Higher Education. Deficiencies in higher education are illustrated by the fact that only 1% of the teachers of Navajo children are Navajos. This is the actual accomplishment of 35 years of a grandly announced and constantly reiterated program of the Federal government to educate Navajos so that Navajo teachers would teach Navajo children. It should be obvious that a wholly new education and degree-granting program is needed in Navajo country, together with considerably expanded programs for scholarships and career opportunities. The Ten Year Plan estimates which follow are designed to increase the 1% of teachers who are Navajo to at least 50% of the teachers of Navajo children.

3. Adult Education. About one-half of Navajo adults over 25 years of age are illiterate in English – neither read nor write – and one-third of Navajo adults do not even speak English.

4. Pre-school Education. This is recognized to be essential for Indian children. Present Headstart programs are funded uncertainly and reach only a portion of pre-school Navajo children.

5. Technical and skill-training. There is no skill center and only minimally equipped technical, paraprofessional and skilled trades training programs for Navajo Indians.

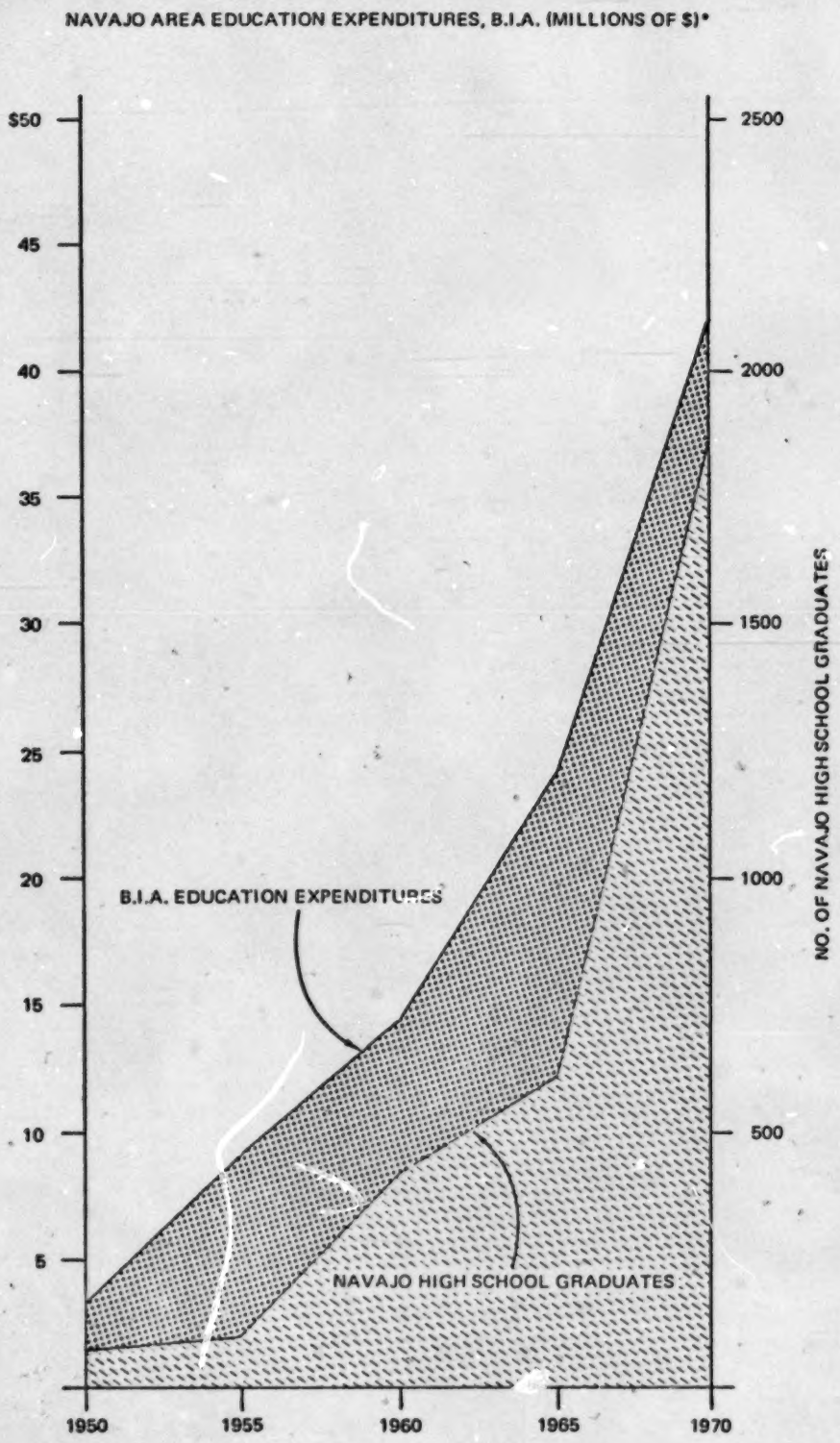
6. Business training. Training in business management and aid to businessmen is essential if the Navajo are to develop their economy.

7. Agricultural training. Here again almost no provision for Navajo Indians has been made by any Government agency or land grant university.

8. Special education. Because of isolation, health and language and cultural factors, Navajo children have especially urgent needs for special education programs.

Investment Needed to Close the Gap – The Ten Year Plan funding requirements for more equitable Navajo educational opportunity are shown in Table 3. All federal, state and tribal programs are included.

Figure 6
INCREASING EXPENDITURES ON EDUCATION BRING INCREASING EDUCATIONAL ACHIEVEMENT



* In current dollars

Source: BIA & Navajo Community College

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Table 3
EDUCATION AND MANPOWER PROGRAMS:
TEN YEAR COSTS & ANNUAL EMPLOYMENT

Educational Program	Cost (10 Yrs.) Construction & Equipment	Cost (10 Yrs.) Operation	Employment (Average Per Year) Construction	Employment (Average Per Year) Operation
Pre-school				
Class and group	$ 10,000,000			
Field & playground	2,000,000	$ 50,000,000	400	400
Life Enrichment	1,000,000			
Elementary & Secondary				
(2.5% growth per year)	120,000,000	630,000,000	600	5,000
Higher Education				
Regular Programs*	15,000,000	50,000,000		
Career Programs	1,000,000	20,000,000	200	500
Business Aids & Education		5,000,000		
Technical & Skill				
Skill Centers (institutional training)	10,000,000	100,000,000	200	300
Work experience and job training		120,000,000	200	200
Agricultural				
NIIP	5,000,000	11,000,000	350	200
Traditional	1,000,000	(included under resources)		
Adult Education				
Community programs (including health)	1,000,000	50,000,000	500	800
Educational TV & radio	1,000,000			
Special Education				
Institutions	1,000,000	3,000,000	50	200
Home programs	–	2,000,000	–	100
TOTALS	$168,000,000	$1,041,000,000	2,500	7,700

*Including scholarships
Source: Navajo Tribal Education Office, BIA, and Navajo Community College

HEALTH

Deficit – The health status of the Navajo is comparable to that of the general population of the U.S. 20 to 25 years ago, according to Public Health Service estimates. The consequences are not only felt in human suffering, but are serious handicaps to social and economic development. Table 4 contains some of the available facts indicating the extent of the deficit in Navajo health and in Navajo health services and circumstances.

Table 4
HEALTH AND MEDICAL CARE INDICATORS:
NAVAJO AND U.S. – 1970

	Navajo	U.S.
Infant death rate, per 1000 live births	42.3	20.7
Incidence of certain infectious diseases, per 100,000 population		
Tuberculosis	270	19
Rheumatic fever	90	1.6
Hepatitis	1,120	223
Life expectancy at birth (years)	63.2	70.5
Hospital beds per 1,000 population	4.4	7.8
Physicians per 100,000 population	92	163

Source: Navajo Area Office, U.S. Public Health Service

Directly related to the high Navajo mortality and morbidty rates are lack of basic sanitary facilities, poor nutrition, the effects of poverty, cultural clash, geographic isolation, unemployment, and lack of education. These related factors are the subjects of other parts of this report.

Investment Needed to Close the Gap – Health services to meet the needs of the Navajo people can be provided in three major categories: (1) Inpatient Services; (2) Outpatient Care Services (outpatient clinics, field health and homes services); and (3) "a vast expansion of preventive medicine, health education," including nutritional programs for young children and for mothers.(4) Needed Environmental Health Services (water, sewer, and waste disposal) are noted briefly in this section, but the costs of providing these services are included in the later "Utilities" section.

Table 5 summarizes the costs involved in providing needed facilities, equipment, staff and other directly related requirements to bring Navajo inpatient and outpatient health services up to more nearly the U.S. level. Figure 7 illustrates the effect that increasing federal programs for medical care have had in increasing Navajo infants' chances for survival.

(4) "A Plan for Navajo Economic Development," by David F. Aberle. *Toward Economic Development for Native American Communities*, Joint Economic Committee, Congress of the United States, Vol. 1, p. 269.

Table 5
MEDICAL CARE PROGRAMS:
TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Cost (10 Years)		Employment (Average Per Year)
	Construction	Operation	
Inpatient Services	$46,000,000	$305,000,000	2,700
Outpatient Services	4,700,000	66,000,000	589
Totals	$50,700,000	$371,000,000	3,289

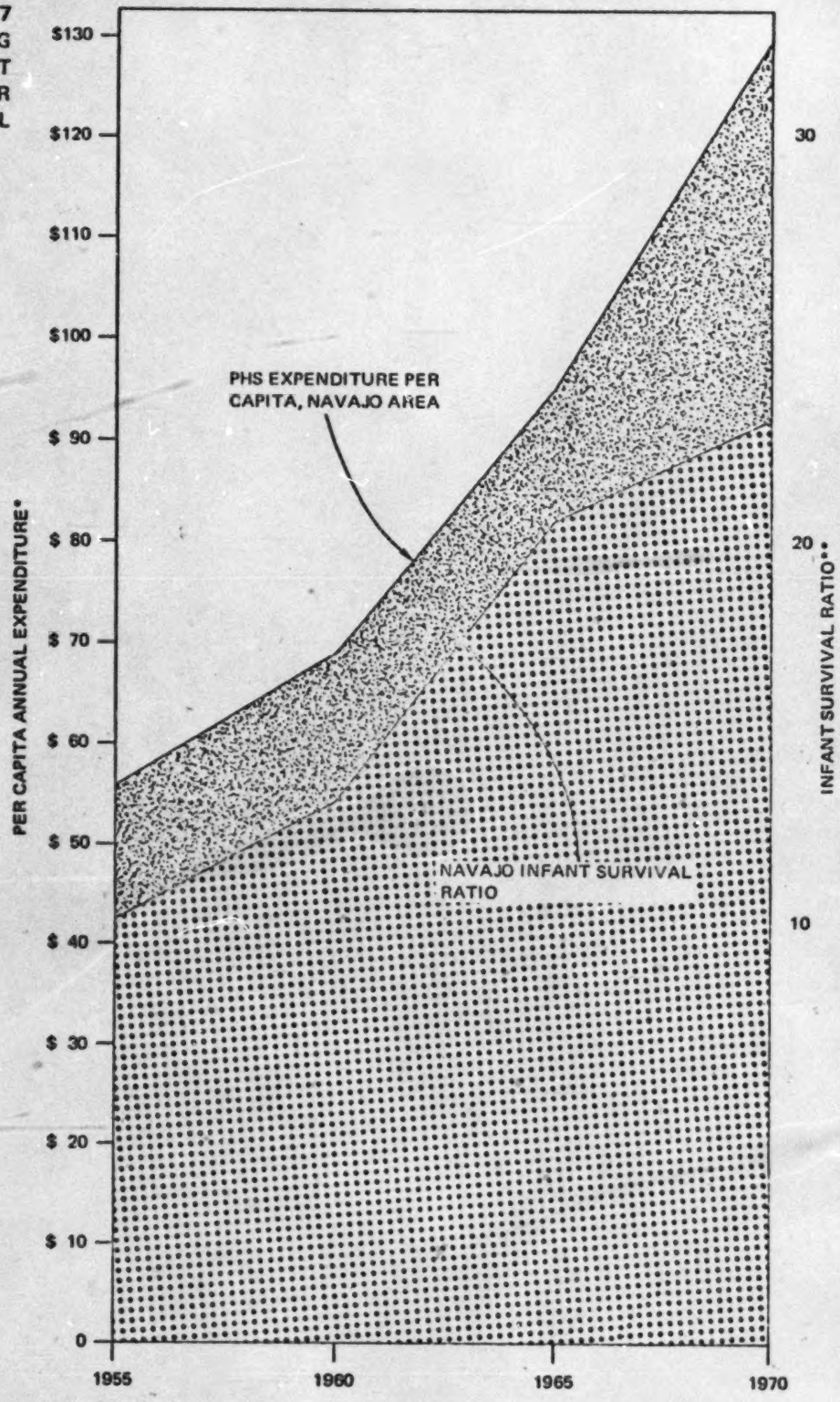
Source: Navajo Area Office, U.S. Public Health Service

Health Education and Nutrition – Malnutrition among Navajo children has received national attention. Pilot projects have demonstrated that educational programs can effectively reduce malnutrition through use of local Navajo teachers under expert guidance and through adequate food supplements. These programs can be combined with community educational programs which will accompany, and undergird, the whole development program. The costs of these educational programs are included under Education and Manpower Development, above.

Environmental Health Services – Provision of elemental sanitation facilities for Navajo communities and homes is essential in the prevention of environmentally related diseases and is basic to the improvement of health. The lack of safe water supplies and waste disposal facilities is in large measure responsible for the high incidence of such preventable diseases as gastro-enteritis and amoebic and bacillary dysentery (more than 27 times higher than the rate in the general population). For Navajo infants who return to their home environment after hospital birth, and particularly for infants one month through eleven months of age, the death rate is about three times that of comparable age groups in the general population.

These conditions are in large part associated with the lack of sanitation facilities in the Navajo home and extremely crowded living conditions. Costs of correcting these conditions are included in following subdivisions headed Utilities and Housing.

Figure 7
INCREASING NAVAJO INFANT CHANCES FOR SURVIVAL



* In current dollars

** Reciprocal of infant mortality rate per 1000 live births

Source: Public Health Service, Navajo Area Office and N.C.C.

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HOUSING

Deficit – Most Navajo people live in one-room log dwellings called hogans. Often these dwellings lack electricity, running water and sewage connections, and are heated by a fire built on the earthen floor or in a small wood burning stove. The U.S. population has one modern dwelling (with standard plumbing facilities) for each 3 people. The Navajo have only 1 modern dwelling for each 20 people.

Other housing deficiencies are of the same order of magnitude. Large families live in a house with but a single room, so that over-crowding by modern standards is the common lot. There are few glazed windows, if any at all, in order to keep out winter cold and summer heat.

In order to provide Navajo people with modern housing, 19,281 new housing units are presently needed. Of the 6585 existing houses which have standard inside plumbing, 4,894 units now need repair and renovation.

Investment Needed to Close the Gap – The estimated costs to provide Navajos who now lack modern housing with housing comparable to U.S. averages are shown in Table 6. The assumption is that a new, 2-bedroom house will cost $18,250 (the present average cost on the Navajo Reservation) and that renovation and repair of presently existing housing will average $3,000 per unit.

During the course of the next ten years, houses will be needed to accommodate the increased population and repairs and renovating will be needed for all standard housing. The costs of such additional housing and of repairs to new housing are *not included* in this report, on the basis that these costs will be assumed in the private sector.

Table 6
HOUSING PROGRAMS: TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Number	Total Cost	Average Employment (Per Year)
New housing presently needed	19,281	$350,966,000	1250
New housing: streets & curbs	19,281	6,250,000	230
Present housing: renovation & repair	4,894	14,682,000	30
TOTALS		$371,898,000	1510

Source: Navajo Housing Authority

ROADS AND OTHER TRANSPORT FACILITIES

Deficit – Roads which have been built on the Navajo Reservation have been built primarily to link the various government facilities – schools, hospitals, and government offices. Two east-west and two north-south highways cross the Reservation. Only 1,370 miles of roads are paved. This is little more than one-third of the ratio of paved roads to square miles in rural areas of the states surrounding the Navajo Reservation. The BIA also maintains what are called "all weather roads" on the Reservation. These roads are indeed all weather, as long as it does not rain or snow. Projections in this program are for roads that are actually "all weather" and for all-weather maintenance (also now generally lacking).

There are no railroads crossing the Navajo Reservation and this makes an adequate highway system doubly necessary. Landing strips have been built here and there on the Reservation but must be vastly improved to serve modern air traffic needs. The failure of adequate transportation facilities is reflected in many deficiencies – boarding school rather than day school education for children, lack of medical care, high prices, and particularly the lack of industrial and commercial development. Some of the needed roads will be expensive to construct – those to the Navajo side of Lake Powell for example.

Investment Needed to Close the Gap – Road construction and maintenance needed to provide a transportation infrastructure for the Navajo equivalent to that in surrounding rural areas[5] would amount to over 2,140 miles of paved roads plus twice that amount of graded, graveled roads. Total costs of needed paved roads at an average cost of $200,000 per mile comes to $430 million. Additional needed mileage of graveled, graded roads would bring total costs of rural roads up to $600 million. Urbanizing communities will need another 400 miles of paved roads, costing another $80 million.

An adequate system of road maintenance would add another $50 million. As time goes on, an arrangement should be feasible to offset a good bit of road maintenance costs from Navajo payment of State gasoline taxes. However this may be arranged, total road costs for the ten-year period would come to $730 million.

Needed airport facilities will add an additional $10 million, bringing the needed road and transportation total to $740 million, employing an average of 1,400 workmen a year in construction, maintenance and administration.

PUBLIC UTILITIES

Deficit – Approximately 61% of Navajo homes are without electricity, and 80% are without water and sewer service.

In off-reservation areas of the United States, 99% of the homes have electric service available and more than 90% have running water and sewer facilities. Due to the fact that more than half of Navajo Indian families have annual incomes of less than $3,000, they will have to use kerosene lamps and to haul water for many miles unless utility expansion can be financed.

With home improvement programs and planned housing expansion, the need for utility expansion and home installation will become even greater. If

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[5] The mileage of rural roads per 1000 square miles of land area in New Mexico, Arizona, and Utah was used as a basis for comparison. Statistical Abstract of the U.S., 1971. Navajo area were provided by B.I.A.

the economy of the Navajo Reservation is to increase, industrial, commercial and tourism facilities must be expanded. As part of this expansion, support services and additional housing will be required to meet the needs of workmen and management personnel. Every expansion and improvement requires additional utility expansion of all types.

Investment Needed to Close the Gap – Table 7 sets out the estimated costs and resulting employment for providing utility service to presently unserved homes.

Table 7
PUBLIC UTILITIES: TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Cost (10 Years)	Employment (Average Per Year)
Labor, Construction	$ 65,000,000	850
Material	84,825,000	
Machinery	9,425,000	
Operations	4,430,000	270
TOTALS	$163,680,000	1,120

Source: Navajo Tribal Utility Authority

PUBLIC SERVICES

Deficit – Public services provided by local governments in the rest of the United States include such functions as public safety, fire protection, law and order, environmental protection and various others. In Navajo country some of these services are provided by volunteer effort by Navajos. Other services are performed by various federal and Tribal offices. A good many of these public services are not found at all in Navajo country. These missing services must be provided and all services must be upgraded in order for economic development to proceed.

Investment Needed to Close the Gap – As economic development brings about changes in urban/rural living a multitude of new public services will be needed, including many of the amenities which are common in American communities but have never been provided in Navajo country. In addition, particular facilities and services (industrial parks, etc.) will be needed for economically productive endeavors. These major needed public services are set out in Table 8.

Table 8
PUBLIC SERVICES:
TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Cost (10 year)	Employment (average per year) Construction	Operation
Public Services (Police and fire protection, public welfare, general control and other)	$146,900,000	100	1,500
Social Amenities (100 parks & playgrounds, etc.)	20,000,000	100	100
Industrial & Commercial Parks (20 such parks)	6,000,000	50	50
TOTALS	$172,900,000	250	1,650

Source: Costs-based on per capita state and local expenditures for all services except education, highways and health. *Financing State and Local Governments*, by James Maxwell, The Brookings Institution, 1965. Employment ratios, *Manpower Report of the President, 1971.* Dollar quantities in the Brookings' study have been converted to 1970 dollar equivalents, but no increase has been estimated for additional services during the ensuing years.

PARKS AND RECREATION

Deficit – Navajoland has a wealth of recreational potential and the human resources are readily available, but development of this potential is lacking, as is the specialized training of Navajos necessary for operation and maintenance. Accommodations, too, are totally inadequate to meet the needs of Navajos and of the touring public.

Investment Needed to Close the Gap – Development plans include areas and sites as follows:

14 major recreation projects either in the planning stage or underway.

18 Navajo Tribal Parks heretofore established or proposed. Development of these has been minimal.

15 Navajo Parks and Monuments presently established in and around the Navajo Reservation.

196 site locations within or near the five Navajo Agencies.

Development of these areas and sites will vary considerably – from the setting of guide signs only to the construction of adequate access roads, motel and restaurant accommodations, trailer courts, campgrounds, rest stops and picnic areas, vistor and culture centers, racetrack and possibly additional airport facilities.

In order to develop these recreational complexes, the Navajo Tribe expects to contract with the National Park Service for the most effective use of funds allocated for development of these facilities and the training of Navajo personnel. Income derived from these projects will be deposited to the Navajo Tribe's account for further expansion and development. When sufficient Navajo personnel have been trained to operate the facilities, the National Park Service will turn over operation and maintenance to the Navajo Tribe. Table 9 summarizes the estimated Parks and Recreation expenditures and employment during the Ten Year Plan.

Table 9
PARKS AND RECREATION:
TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Cost (10 years)		Employment (average per year)	
	Construction	Operation	Construction	Operation
Present program continuance	–	$ 5,000,000	–	100
New Programs				
Major projects	$ 56,900,000	8,534,000	350	2,500
Navajo Tribal Parks	51,400,000	7,710,000	300	1,900
National Parks & Monuments	(NPS)	(NPS)	–	–
Historical & Scenic places	5,000,000	750,000	50	300
Interpretive material	1,500,000	225,000		
TOTALS	$114,800,000	$22,219,000	700	4,800

Source: Navajo Tribal Parks and Recreation Division

LAND AND WATER RESTORATION AND CONSERVATION

Deficit – Because of lack of dams, canals and irrigations systems, the Navajo have never been able to make use of their rights to the water which flows through their land. The Navajo Indian Irrigation Project is lagging far behind its scheduled construction, and other reclamation projects for Navajos are pitifully few and inadequate. These deficiencies and others brought about pressures on the land which resulted in the erosion crisis of the 1930's. The land was never restored after this crisis. Government programs have touched only a few small areas in the most favorable locations.

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Investment Needed to Close the Gap – In order to make optimum use of Navajo land and water resources, much more must be found out about their quantity and quality, and a massive campaign must be set in motion to conserve those that are being lost and to utilize all of them in ways that bring most benefit to Navajo people.

Navajo Indian Irrigation Project. Completion of the Navajo Indian Irrigation Project has top Navajo Tribal priority. Funds were promised for this Project when the Navajo permitted diversion of San Juan River basin water to the Rio Grande. The water is now going to the Rio Grande, but the Navajo Project has lagged intolerably. Estimates are that $170 million (at present prices) will be needed simply to complete the basic canals and related facilities. If the Project is to be completed by 1986, about $150 million will be needed during the Ten Year Plan; i.e., through 1982.

Transforming Traditional Agriculture. The second need is for a program to upgrade the productivity and incomes of those several thousand Navajo families engaged primarily in traditional livestock and farming operations. The low productivity of traditional agriculture is primarily the result of minimal investment in capital goods and in human resource development.

Transforming traditional agriculture requires patient, persistent effort, involving demonstration to many stockmen and farmers of the means of increasing their incomes through better technology and better livestock and farming practices. The essential means seems to include withdrawal in accordance with community planning of a sequence of grazing on selected pasture areas while new grass and cover crops are grown. This would imply not only investment in pasture improvement and stock upgrading, but also feed for stock kept off the accustomed (and only) range.

Costs of conservation and restoration of Navajo soil and water resources other than the Navajo Indian Irrigation Project are set forth in Table 10. These costs were calculated on the basis of the present cost of pilot reseeding projects which are being carried on by Tribal and federal agencies. Because of stock care, water and other problems, it is likely that only one-third of the total land acreage which needs restoration can be usefully attended in the course of the next ten years. Minimum attention can be given the other areas, and needed reservoirs, tanks, etc., can be built.

In addition to administrative and technical staff, approximately 5,000 Navajo families would be involved in the work of transforming Navajo agriculture to modern productivity. Their work would be combined with training and work experience and the total costs are included in the Public Sector (i.e., in this Section) regardless of whether these costs take the form of investment in human or in natural resource development. Total employment is included in the private sector since these families will be making their own way as time goes on.

Table 10
TRANSFORMING TRADITIONAL AGRICULTURE:
TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Cost (10 Years)	Employment (average per year)
Navajo Indian Irrigation Project:		
Project construction through 1982	$150,000,000	500
Traditional agriculture area		500 (staff)
Reseeding, fencing, etc.	150,000,000	
Wells, stock tanks, etc.	20,000,000	
Reservoirs, runoff controls, irrigation systems	100,000,000	(5,000 families included in Private Sector tables and totals)
Income maintenance, stock feed, etc., during soil restoration	100,000,000	
TOTALS	$520,000,000	1,000

Source: Navajo Tribal Water Resources Office and BIA

RESEARCH AND DEVELOPMENT

Deficit – In spite of thousands of studies about Navajos, many essential facts needed for economic development are not known. Information that must be found out about Navajo resources – water, soils, minerals, etc. – is noted in foregoing sections. We do not know, moreover, many things that we need to know about adapting animals and plants to meet the semiarid Navajo conditions. Economic and social data are even scarcer and less reliable. In writing this brief summary, for example, many obviously needed facts simply could not be found – the extent of Navajo capital investment in agriculture, for example, or the supply of skilled Navajo construction workers. Moreover, the scattered data which have been compiled are not available in any one place, and essential facts are not kept up to date in useful trend series.

What certainly is not needed is more studies *about Navajos*. What certainly is needed is research ***by Navajos, for Navajo use.***

Investment Needed to Close the Gap – Investment in Research and Development (R & D) runs at about 5% to 6% of GNP in a number of major industrial countries. This sum gives a guideline for estimating needed Navajo R & D investment. Navajo R & D need not concern major national problems (defense), but will have to involve more than the usual amount of demonstration projects and more community development research, i.e., research geared to social programs. The following major areas are noted here, although further expenditure breakdown would be premature.

Health, including a substantial mental health component.

Economic development incentives and community organization, including business structure adaptation to Navajo social forms.

Resource inventories and utilization methods – including conservation and restoration of land, plant and animal life and water resources.

For purposes of this report, an R & D component of public funds is provided for at the rate of 1% of total public expenditure. This percentage is roughly one half of the non-military and non-space percentage of R & D expenditure to U.S. Gross National Product. The resulting expenditure would amount to $40 million, with employemnt estimated at an annual average of 100.

Employment

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SECTION III

DIRECTLY PRODUCTIVE ACTIVITIES

The investments in natural and human resource development which are summarized above in Section II will, if properly designed, generate an accelerating output by directly productive activities – manufacturing, mining, more productive agriculture, service businesses, commercial establishments and the rest of the generally private sector operations that keep the American Economy going. The greater part of investment in these enterprises will be private, but substantial public support will be needed. This section summarizes the public investment which will be required. The whole experience of Indian areas, and in fact of all lagging economic areas, makes it clear that Indian businesses will have to be encouraged and aided if they are to have a chance to survive.

The proportion of public funds to total required capital (public plus private capital) varies with the type of enterprise. Capital requirements for industries such as electric power production are very high, but private sources can be expected to provide practically all of the needed capital. Service businesses, on the other hand, require much less capital but in the early stages of Indian community development most of this capital will have to come from public sources. This section therefore presents capital requirements in broad categories according to the proportion of needed public funds. Mobilization of private capital will increasingly be the key to development, however, and first attention in this section is devoted to providing a credit structure which will mobilize savings and channel them into productive investment.

A basic and perhaps heroic assumption in the estimates that follow is that Navajo society can absorb (put to efficient use) the amounts of capital needed to provide the specified employment. The social overhead expenditures detailed in Section II, above, should warrant the basic assumption in every major employment area but two – in commercial and service businesses and in traditional agriculture. Because of the slowness of change in these sectors, no change is projected for employment in traditional agriculture, and only two thirds of the ideally potential expansion is projected for commercial and service businesses.

Figure 8 illustrates the disproportionate reliance of the Navajo economy on government services and traditional agriculture, in contrast with the dominance of productive activities in the U.S. economy. The Ten Year Plan will significantly increase the share of productive activities in the Navajo economy.

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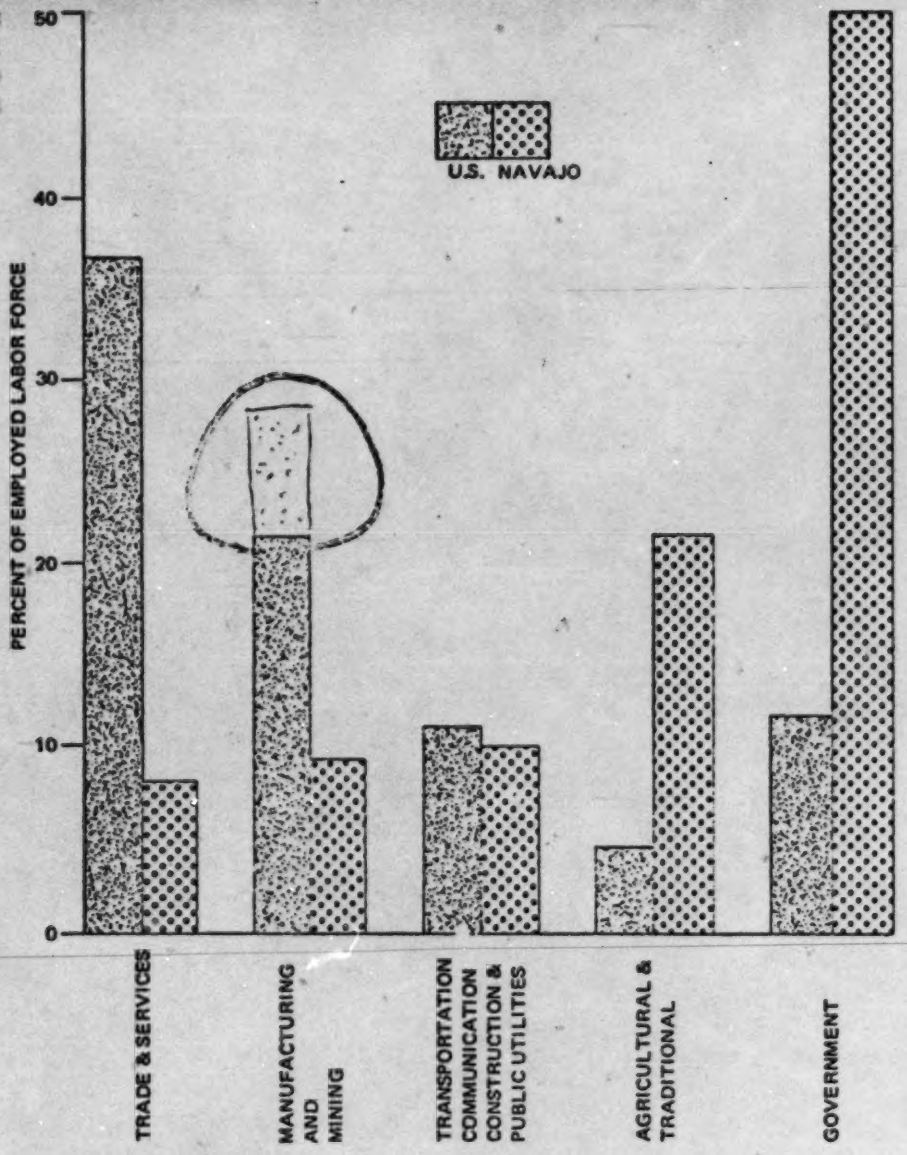
Figure 8
INDUSTRIAL MIX OF U.S. AND NAVAJO ECONOMIES



Source: U.S. data – Manpower Report of the President, 1971;
Navajo data – "Manpower planning for Navajo Employment," by Philip Reno, *New Mexico Business*, Nov-Dec., 1970.

A SAVINGS AND CREDIT STRUCTURE

Adequate credit, properly supervised and coordinated with training and education, has often been judged to be the essential element in successful economic development programs in emerging countries. Various special circumstances confront development of a Navajo credit structure. Most Navajo incomes are barely enough to meet subsistence needs. Navajo savings are consequently low. Incomes of employed Navajos are rising, however, and economic development will provide more savings. There are only five commercial banks on the Navajo Reservation, and none of these is focused on support of local business development.

The difficulty which Indians have in obtaining credit for businesses has been noted in practically every study of constraints on Indian economic development. In consequence of these constraints, special credit institutions are needed in Indian country. Special institutions do exist – SBA, EDA, and the Tribal Revolving Loan fund – but these institutions have only a fraction of the loan capital needed to meet current requests and are not structured to render the required services. These institutions must be adequately capitalized, and new and different credit forms and institutions must be created if Navajo business is to have a chance to develop.

Recommendations for new credit forms for Indians generally have included the following suggestions:(6)

1. An appropriation of additional funds for Tribal Revolving Loan Funds.
2. Establishment of a loan guaranty fund.
3. Authorization of interest subsidies on guaranteed loans.
4. Authorization for sale of existing revolving fund loans to financial institutions, thereby increasing the amount of funds available for loan.
5. Authorization for the Tribes to issue bonds exempt from federal income tax for purposes related to the governmental affairs or operations of the Tribe.
6. Establishment of Tribal banks and development corporations to administer the above and other credit.

Estimates of public loan funds needed for Navajo development of particular sectors are included in the following pages. Estimates of revolving fund and credit guaranty needs are therefore not included (to avoid double counting) in total capital needs set out in Table 13 at the conclusion of this section.

Additional forms of public support for business operations in developing areas include tax advantages and allowances, perference in government contracts and purchases, and various other forms. Each of these forms needs to be explored in providing adequate support for Navajo Indian business development.

SMALL BUSINESS DEVELOPMENT

Manufacturing, Processing and Transportation – Certain productive enterprises can be planned to provide inputs for the various social overhead investment programs summarized in Section II. Construction is the major industrial sector involved in the projected social expenditures, and needed inputs can be estimated precisely enough to plan production of these inputs. A considerable amount of cabinets and furniture will be needed, for example, and a certain amount of concrete and concrete products. Production of these items will require publicly-funded capital investment in buildings and equipment and operating capital.

Capital will be required for other production for local consumption, and for transportation and trucking businesses to serve the local market. The amount of needed capital can be estimated on the basis of regional or

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(6)"Indians' Problems in Acquiring Development Capital" Report to the Four Corners Regional Commission by New Mexico State University Agricultural Experiment Station.

"Toward a Fundamental Program for the Training, Employment and Economic Equality of the American Indian," by Herbert E. Striner, Upjohn Institute.

national product-to-population ratios. Ratios of local production that are higher than national ratios can be obtained by "import substitution" policies in Navajo country, but the estimates in this report simply reflect regional or national ratios. The total public investment needed to support 2,400 employees in manufacturing, processing and transport is estimated at $24 million. Private funds of almost $30 million will be generated by the public commitment.

Commercial and Service Businesses – Retail business activity depends on disposable incomes as well as numbers of people, and also on factors such as transportation and peoples' wants and needs. National income levels are far higher and consumption patterns far different from those of the Navajo. More comparable estimates can be derived by use of New Mexico rather than U.S. ratios, and this is the basis for the following estimates of Navajo retail and service business potential and capital requirements.

Because of the lag in Navajo incomes and because of social and cultural factors constraining small business development, the goal set for the Ten Year Plan is achievement of two-thirds of the New Mexico level of commercial and service businesses. It is hoped that through the impetus given the Navajo economy by the Ten Year Plan the gap can be wholly closed within one generation.

Table 11
RETAIL SALES AND SERVICES: NAVAJO AREA AND NEW MEXICO

	New Mexico	Navajo	
		Present	To Be Developed
Number of establishments per 100,000 people	936	200	424
Number of employees per 100,000 people	7,000	1,200	3,500
Average annual sales per establishment			
Retail trade	$145,000)	$70,000	
Selected Services	$ 61,000)		

Source: Bureau of Business Research, University of New Mexico, and Navajo Community College

On the basis of national averages of capital to sales ($1 of capital to $3 1/2 of sales), initial capital investment of $30 million is needed in order to bring Navajo retail and service business activity up to two thirds of 1967 New Mexico averages. A continuing stream of savings and investment will be required. A decreasing proportion of this stream of funds will be required from public funds. For purposes of estimating a total ten-year public fund requirements for retail sales and service businesses, it is simply assumed that continuing capital requirements will be met from private sources, but that the total of initial capital ($30 million) will have to be provided by public loan funds.

LARGER SCALE INDUSTRY

The major manufacturing plant in Navajo country is the Fairchild Semiconductor facility at Shiprock, New Mexico. Two additional facilities of this size, or a number of smaller ones, would bring the ratio of Navajo employment in manufacturing up to the New Mexico proportion of manufacturing employment to total labor force. Tribal and Federal funds amounting to $6.7 million have gone into programs to aid the Fairchild plant's establishment and operation. Funds of double this sum are projected in Table 13 for development of additional plants of about twice the total employment capacity of the Fairchild plant.

Present and planned processing of Navajo resources includes large scale coal gasification and production of electric power. Funds should be obtainable from private sources. Funding for development of Navajo timber resources is projected in Table 13 at the rate of development which obtained over the last ten years.

The Navajo Tribe, itself, is not unfamiliar with large scale industry. It owns and operates one of the largest saw mills in the United States, employing over 500 Navajos. The Navajo Tribal Utility Authority serves the entire reservation with electricity, gas, water and sewage disposal. It is Tribally owned and employs over 600 Navajos. The newly established Navajo Agriculture Products Industries will, when the Navajo Irrigation Project is completed, be one of the major agri-business enterprises in the Southwest.

More complete and profitable utilization of the Navajo mineral and fuel resources is currently being planned. Several private firms are well along in planning large scale coal gasification plants and electric power generating plants. The present and future plans for development of these resources will involve the Tribe and the Navajo people in a much more profitable way than has been the practice of the past.

It is anticipated that most of the funding for the planning and construction of plants using the mineral and fuel resources of the Navajo Reservation will come from private sources. Some initial financing might be required for investigations, pilot plants, feasibility studies, etc. Such public funds as can now be foreseen are included in Table 13. More complete forecasts will result from the research for Part II of The Navajo Ten Year Plan.

TOURISM AND OUTDOOR RECREATION

As noted above under "Social Overhead Investment, Parks and Recreation," Navajo country contains the greatest abundance of historical, cultural and natural resources under the collective ownership of an Indian Tribe in the United States. Lodges and motels, campgrounds, etc., will be needed in order to develop the economic opportunities presented by these resources. Capital requirements for these facilities are set forth in Table II. These initial investments would require 20% of Tribal and 80% of public funding, if past funding ratios for this type of Tribal enterprises continue in the future.

Navajo arts and crafts – rugs, silverwork and the rest – are world famous. If properly developed, sales of these items could provide much better incomes for Navajo people. Underdevelopment of this resource at present is a consequence of lack of capital for effective outlet development, for inventory build up and for adequate promotion.

Estimated capital needed for this and other tourism and related development is included in Table 12. Many of the 5,000 or more Navajos who are presently engaged in arts and crafts production make much less than

adequate incomes. The goal of this Plan's investment is not to increase the number employed but rather to increase the incomes of those engaged in this work.

Table 12
TOURISM & OUTDOOR RECREATION:
TEN YEAR COSTS AND ANNUAL EMPLOYMENT

	Public funds Cost (10 Years)		Employment (average per year)	
	Construction	Operation	Construction	Operation
Tourism facilities	$22,960,000	$3,443,000	280	952
Arts and crafts	2,000,000	8,000,000	(5,000 presently employed, mostly part time)	

Source: Navajo Program Development Office

AGRICULTURE

Agriculture – stock raising and small farms – has traditionally been the source of Navajo livelihood. Today these agricultural activities engage some working time and effort by nearly one-third of all Navajo families, and contribute a major source of livelihood for a good many of these families. With only a few exceptions, these agricultural incomes provide only bare subsistence. A primary effort must clearly be devoted to developing Navajo agricultural productivity and income. This will be done in two major ways and will involve investment programs as follows:

1. Navajo Indian Irrigation Project – The major hope for agricultural development rests with the Navajo Indian Irrigation Project, which will bring 110,000 acres into irrigated agricultural production. In addition to the basic water diversion system, funds will be needed to build farm roads, water systems, and community services. These costs are included in the foregoing Social Overhead section (Section II).

To provide direct, productive means for realizing the Project's agricultural potential, capital investment will be needed in farm structures (living quarters, barns, corrals, etc.) in equipment, livestock, other capital goods, and in working capital in reasonably equivalent amounts to general requirements in America. Since the Navajo have little or no savings to invest in agricultural enterprise, new credit forms and a substantial amount of "seed money" public investment will be needed in equipment, facilities and agricultural technology.

The amount of such capital investment needed for Irrigation Project Operations has been estimated at over $50 million,(7) or about $30 million during the years from 1976 – 1981 (years included in the Ten Year Plan). This sum accords with the investment required for a productive farm and stock business of family size in the United States (which varies from $120,000 to $200,000). This rate of capital needs would aggregate approximately $33 million by 1981. In addition, crop production credit will be necessary. An initial public commitment of $10 million may be adequate.

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(7)"Projected cropping patterns, livestock enterprises, processing activities, capital requirements, employment, income, and training needs for alternative farm organizational structures for the Navajo Indian Irrigation Project," Department of Agricultural Economics and Agricultural Business, New Mexico State University, June 1971.

Processing and service businesses (including feed lot and livestock operations) will require initial capital outlays of another $30 million, more or less, by 1981. As time goes on, an increasing proportion of capital for these enterprises will come from private sources, but at the outset the regional ratio of public loan funds (40% public/60% private) can be anticipated in order to develop the Navajo share of enterprise.

2. Transforming Traditional Agriculture – More than 5,000 Navajos who are now engaged in traditional agriculture and stock raising will not be reached through the developments set out above. These Navajos will, however, share in projects for restoring the Navajo land and water resources and in transforming traditional agriculture to more productive operations. The major capital costs in achieving this transformation are included in the Social Overhead Section II, above. Private sector investment (individual and family investment) should be supported by public investment in the early stages of development. A public share of $50 million should initiate a production credit system capable of maintaining its operations.

Table 13
REQUIRED PUBLIC FUNDS AND ADDITIONAL EMPLOYMENT: DIRECTLY PRODUCTIVE ACTIVITIES

Sector	Required Public Funds*	Employment per year Additional	Present	Total
Small Business				
Manufacturing, Processing, Transportation and Construction	$ 24,000,000	2,000	200	2,200
Retail Trade and Selected Services	30,000,000	3,500	1,200	4,700
Larger-scale Industry				
Footloose industry	~~12,000,000~~ 2,000,000	~~2,000~~ 1,000	1,000	~~5,000~~ 2,000
Resource utilization	~~4,000,000~~	~~4,000~~	700	~~4,700~~ 2,700
Navajo Forest Products Industries	8,000,000	300	500	800
Tourism and Outdoor Recreation				
Motels, Resorts and Directly related enterprises	26,000,000	1,000	200	1,200
Arts and Crafts	10,000,000	(additional income for those now employed)		
Agriculture				
Navajo Indian Irrigation Project (to 1981)				
Completion of Project canals, etc.	(Under Social Overhead, Section II)			
Farm development	30,000,000	1,000	–	1,000
Processing and Service development	30,000,000	1,000	–	1,000
Crop Production	10,000,000	(above)		
Transforming Traditional Agriculture	(Under social overhead)			
Production Credit	50,000,000	–	5,000	5,000
TOTALS	$232,000,000	11,800	8,800	20,600

*Public funds needed to generate and support private investments. As noted in the text, private funds in varying proportions are expected to carry most of the investment in productive activities. In some cases practically the total investment will come from private sources; in every case a major share will be private investment. At this stage of planning, it is not possible to estimate with any reliability the private capital which will be forthcoming.